http://www.clipartlord.com/wp-content/uploads/2013/02/baby4.pngSBI 3U **What is Heredity?** Date:

The passing of traits from parent to child is the basis of heredity.

**Where are our traits?**

Our \_\_\_\_\_\_\_\_\_ encode instructions that define our traits. Each of us have thousands of genes, made of \_\_\_\_\_\_\_\_\_\_ that reside in our \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ we grow up in and live in also helps define our traits. Example: our genes may determine our hair colour, but exposure to chemicals and sunlight can affect that colour.

**How do we get traits from our parents?**

Humans have \_\_\_\_\_\_\_\_\_ complete sets of \_\_\_\_ chromosomes. ( x = total)

When parents conceive a child, they each contribute \_\_\_\_\_\_\_\_\_\_ complete set to the child. In this way, parents pass \_\_\_\_\_\_\_\_\_\_\_ to the child.

Every child receives \_\_\_\_\_\_\_\_\_ its chromosomes from its father and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from its mother.

This transfer takes place at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, when the father’s \_\_\_\_\_\_\_\_\_\_\_\_\_ cell joins with the mother’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

While most cells in our bodies contain two sets of chromosomes ( x = ), sperm and egg cells each have only one set ( ). When they join, they create a single cell called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which has two sets of chromosomes ( ).

This cell will divide, ultimately developing into a child.

Each parent contributes one complete set of chromosomes to the child. This set can contain chromosomes from both of the parent’s two sets. The only rule is that the child must receive \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Every child will have a unique combination of traits. Some will resemble the mother, some the father. Others will be unique, a product of the new combination of chromosomes.

**Some Observable Human Characteristics**

Some traits are controlled by genes that pass from parent to child. Others are acquired through learning. But most are influenced by a combo of genes and the environment.

Examples: